Excluding the 48 cases which terminated fatally during forty-eight hours, the 19 cases which required primary amputation and the 2 cases which were immediately transferred from the hospital at their own request, and there remain 447 consecutive cases of compound fracture with only 2 deaths, giving a mortality of less than .5%; if, now, the 61 cases of compound fracture of the bones of the hand and feet be excluded as too insignificant, in accordance with the custom among all surgeons in their statistical reports of cases, there still remains 385 cases of compound fracture with but a single death, giving a mortality of less than 1/3%. In comparison with this, attention is called to the fact that previous to the adoption of antiseptic methods, the rate of mortality in the best of tables varied from 20 to 60 %.—*Med. News*, Nov. 13, 1886.

JAMES E. PILCHER (U. S. Army).

GENITO-URINARY ORGANS.

I. On the Pathology of Hæmatocele. P. RECLUS (Paris). In a long article on the pathology of hæmatocele M. Paul Reclus, basing his remarks on the fact that inflammations of serous membranes are secondary to those of the organs they envelop, suggests the term "pachy-vaginalitis" as giving an exact notion of the disease and relating it to similar lesions in the meninges. The cause is nearly always an injury or some habitual irritation, so slight sometimes as to escape notice; for example, the frequent contusion of the testes on the pommel of the saddle in riding. The gland must here suffer more than the serous covering. It becomes irritated, the circulation is slackened, a small quantity of blood fibrine spreads out over the serous membrane, and this is repeated, so that fresh layers form. It will be found that the epididymis being more vascular and less protected than the testicle, which has its tunica albuginea, suffers more than the latter, and that the different layers of blood have it generally as their centre, the internal ones being those which are thickest and most recently formed. —*Gaz. hebd. de Med. et de Chir.*, Sept. 24, 1886.

L. MARK (London).

II. Against Distending the Bladder for Epicystotomy. By Prof. von Dittel (Vienna). Last year Von D. Reported 400 cases of operation for calculus (v. Annals, 1885. Oct. Pp. 334-5) to which 50 later cases are now added.

He first criticizes the of late favorite plan of injecting the bladder before the suprapubic operation. In a former article he suggested the possible superiority of air for such injection, as it would first distend the crest of the bladder instead of the fundus, and might cause less harm if it ruptured through into the tissues. But this latter advantage would be slight unless, as he then supposed, the tear was in the anterior wall. Experiments on twenty cadavers have shown, amongst other things, that such is not the case. The quantity of water requisite to produce rupture of the bladder ranged from 300 to 5,000 grms. (in subjects from 2 to 74 years of age). Of 15 ruptures from injection with water 7 were through the anterior and 8 through the posterior wall. The exact localization of the tear depends on many conditions, as the remains of previous morbid processes, the great variation in the general shape of the bladder and the arrangement of its detrusor fibres, etc. The effect of such filling in raising the peritoneal fold in front also varies widely. As to air, owing to its compressibility, more is tolerated. Three experiments gave 1,200, 1,650 and 2,100 cc. respectively; in a fourth, after injecting 3,000 cc. air, it required 300 grm. water to rupture; in another, where 1,800 cc. air was borne, 1,800 grm. water caused rupture. In the first three the tear was through the posterior wall.

It may be urged that such quantities are not required in practice, though this does not hold for three of his experiments where 300, 600 and 800 grms. caused rupture. Moreover during life cases are met with where the bladder contracts so strongly that even under deep narcosis nothing can be injected into the bladder.

Any operative method must be decided by clinical observation and this also shows the danger of injections. In a case of Prof. Weinlechner's on a child the high operation was done after a small injection into the bladder. It was found at the autopsy that a small diverticle near the incision had bursted. A like fatal result in a 5-year-old boy with a large calculus was reported by Von D. in his previous list. After 100 grms. had been injected the resistance diminished. Operation. Death in three days. Rupture of posterior vesical wall, starting from a small diverticle. Another case of Weinlechner's on a man æt. 67, is here reported. After washing out the bladder for a few days 200 grms. were injected provisional to operating. Bloody fluid came back for the first time, probably, as the autopsy indicated, from beginning rupture though the man had a stricture. A colpeurynter containing 200 grms. was introduced (into the rectum) and 300 grms. fluid injected into the bladder; 200 more were needed before the bladder appeared. Fluid tinged with blood in the prevesical tissues showed that rupture had already occurred. Death in twenty-four hours. There was an oblique circular tear through mucous membrane and subjacent muscular layer, extending from the posterior wall around on the left to anterior. The mucous membrane was polypous, œdematous, injected, and in wide patches cicatricial resembling a serous membrane. A fourth case is quoted from Guyon (v. ANNALS, 1886. April. P. 347.

He does not doubt that some way of avoiding this danger will be devised, but holds that for the present the method involves too great a risk. [It will be noticed that this article deals almost wholly with the volumes injected, but gives no exact data as to pressure.]

His last 50 cases include 1 lateral, 1 median and 9 suprapubic operations, 2 lithotripsies and 37 litholapaxies. Of the 9 epicystotomies 5 died, 2 certainly from the operation, 3 perhaps only in part; in no case did infiltration of urine into surrounding tissues occur. The 39 operations by crushing gave no fatal results; ditto the 2 perineal operations.—*Wien. Med. Wochen.* 1886. Nos. 42–46.

WM. BROWNING (Brooklyn).

III. Use of Cocaine for Litholapaxy. By T. J. VDOVIKOVSKY, M. D. (Odessa, Russia). Having paid a glowing tribute to the American surgeons (Bigelow, Otis, Weir, etc.) who have brought about a radical reform in the treatment for stone in the bladder, Dr. V. described four cases of his own in which he used cocaine for litholapaxy.

CASE I. N. K., male, æt. 30, for six years had the symptoms of stone in the bladder; was admitted to the hospital on January 11,

1886. He had a stone $4^1/_2$ ctm. in diameter, hard, movable; also purulent catarrh of the bladder. On January 20 litholapaxy was performed in one sitting. Having washed the bladder and urethra with 4% solution of boracic acid, 2% solution of hydrochlorate of cocaine was injected in the amount of $3^1/_2$ ounces. After 12 minutes the large lithotrite of Bigelow was introduced, the stone was seized at once, and in nine minutes it was crushed 24 times. By aspiration many fragments of stone were brought out. Then the lithotrite of Reliquet was introduced, and the larger fragments of stone were crushed; again aspiration. Then the lithotrite of Thompson was used twice, and all the fragments of stone were washed out. There was no contraction of the bladder at all. The patient began to feel pain only 35 minutes after the commencement of the operation. No fever followed the operation. On the third day the traces of blood in urine disappeared. Catarrh of the bladder was cured in twelve days.

CASE II. M. P., male, æt. 20, was suffering from stone for 16 years. On examination a stone was found, 6 ctm. long, hard, smooth and movable. On February 10, 1886, operation. Four per cent. solution cocaini muriatici was injected, and after 15 minutes Bigelow's lithotrite was introduced. After aspiration the lithotrites of Reliquet and Thompson were used. The operation lasted 1 hour and 53 minutes. In 35 minutes the patient began to feel pain, and in 40 minutes the effect of cocaine seemed to have passed away, therefore the second half of the operation was painful, and toward the end of the operation the bladder began to contract. No fever after the operation. Acetate of lead, nitrate of silver and electricity were used for purulent catarrh of the bladder. The patient left hospital cured, March 20, 1886.

CASE III. V. Z., male, æt. 22, entered the Military Hospital on March 12, 1886. He was suffering from the stone for eight years. A stone was found, $3^1/_2$ cm. in diameter. On April 3 Dr. V. performed the operation in presence of several military surgeons who have found out that cocaine had no effect on temperature, pulse, respiration and the pupil of the eyes. The operation lasted about half an hour, and was painless; no contraction of the bladder was noticed. On the sixth day the patient left the hospital cured.

CASE IV. Dr. I. H., æt. 59, for years was suffering from rheumatism, asthma and stone in the bladder; he was nervous and very sensitive to pain. Dr. Vdovikovsky hardly could persuade his colleague to submit to the operation. The stone was only 2 cm. in diameter, but it was hard and smooth. The operation was performed on April 2. Four per cent. solution of cocaine was used, and Thompson's lithotrite. The operation lasted only 12 minutes, was quite painless, and the patient was very much surprised when he was told that it was all over. The patient was quite well on the fourth day after the operation.

Dr. Vdovikovsky comes to the conclusion that the use of cocaine alone is quite satisfactory when stone is not large and the operation can be performed in half an hour, which is the limit of cocaine's effect. In cases of large stones chloroform is preferable, but even then, if contractions of the bladder are noticed, cocaine is properly indicated.—*Chirurgitchesky Vestnik*, (St. Petersburg), Aug. 1886.

P. J. POPOFF (Brooklyn).

IV. Two Cases of Supra-pubic Cystotomy. By M. C. F. GAVIN, M. D., and A. T. CABOT, M. D. (Boston). Gavin's case occurred in an old ex-soldier of dissolute habits, æt. 52, with stricture of the urethra (which contained two fistulous openings, the result of false passages in attempting catheterization), and partial ankylosis of the lower extremities, by which litholapaxy and perineal lithotomy were both rendered impossible. The fistulæ prevented satisfactory distention of the bladder, but after the inflation of a bag in the rectum, an incision in the median line four inches long exposed the bladder, which was readily caught and opened. Some difficulty was experienced in seizing the stones, which were encysted in pockets in the thickened vesical wall; they were finally, however, seized with lithotomy forceps on being pushed up by an assistant's finger in the rectum. The peritoneum was not seen during the operation.

Cabot's case occurred in a debilitated man, æt. 49, who had suffered from stone for a number of years; a stricture almost obliterated the lumen of the membranous urethra. The stone was found to be large and, the strictured urethra contraindicating litholapaxy, the supra-pubic operation was decided upon. After introduction of sixteen fluid ounces of water into the bladder, the supra-pubic region was still tympanitic on percussion, but became duller on the distention of the rectal bag, although it never reached flatness. On incision, the peritoneum was seen to extend nearly down to the pubis, but after incising what appeared to be a prolongation of the transversalis fascia below it, it could be drawn up out of the way. The bladder was then incised and a very large heart-shaped stone, weighing 1,180 grains, removed without trouble. Both patients recovered well:—*Boston Med. and Surg. Jour.*, Nov. 11, 1886.

V. Observation on the Male Urethra with Applications to Endoscopy, Litholapaxy and Catheterization. By OTIS K. NEWELL, M.D., (Boston). The author has made a number of observations for the purpose of obtaining the length of the shortest instrument that can be introduced through the male urethra into the bladder, and finds that, as the pendulous portion of the urethra can be folded together so that its long axis occupies not more than from $1^1/_2$ to 2 inches, for surgical purposes the length of the urethra is but 4 inches, increased in cases of hypertrophy to a possible six, and an instrument with a length of 5 inches or more is sufficient for any normal subject. Bearing in mind also the large size of the evacuators used in litholapaxy, he has constructed an endoscope having a 30-calibre, with the visceral opening oblique, especially designed for the inspection of the bladder and permitting, what has hitherto not been done, the introduction of instruments through it, so that with suitable forceps, a foreign body can be removed without operation through it. The shortness of the urethra justifies him in shortening the distance between the orifices of the tube of Bigelow's evacuator for litholapaxy from $15^3/_4$ to 10 inches, by which he greatly shortens the period for the evacuation of the contents of the bladder in that operation; the tube is staight, which also adds to the readiness of evacuation. The author claims that the modified evacuator removes fragments four or five times as rapidly as Bigelow's instrument. He also advocates the shortening and increasing the diameter of the lithotrite, believing six inches to be long enough for any divulsor. When a catheter or tube is to be used for washing out the vesical cavity, it should be as short and of as large a calibre as possible, so as to best admit the free passage of fluids, thick mucus, or other matter, although a longer size for convenience of manipulation, is desirable for ordinary purposes. The illustrations of his endoscope do not show the instrument clearly, and his description is greatly wanting in lucidity.—*Boston Med. and Surg. Jour.* Nov. 11, 1886.

VI. Rules for the Application of Electrolysis in the Treatment of Urethral Stricture. By ROBERT NEWMAN, M.D., (New York). In a critical paper showing the causes of failure in treating stricture of the urethra by electrolysis, to be due to (1) the incompetency of the operator, (2) mismanagement of the treatment, (3) mistaken diagnosis and (4) faulty instruments, the author presents the following rules as a safe guide to practitioners: 1. Any good galvanic battery will do which has small elements and is steady; the twenty-cell Drescher battery, carbon and zinc, is an excellent instrument sufficient, particularly, for the beginner. 2. The fluid for the battery ought not to be used too strong. 3. Auxiliary instruments, as galvanometer, etc., are important to the expert, but not necessary for the beginner. 4. For the positive pole, a carbon electrode is used, covered with sponge moistened with hot water, and held firmly against the patient's hand, thigh or abdomen. 5. For the absorption of the stricture, the *negative* pole must be used. 6. Electrode bougies are firm sounds insulated with a hard-baked mass of rubber; the point is a metal bulb. egg-shaped, which is the acting part in contact with the stricture. 7. The curve of the bougie is short; large curves are mistakes. 8. The plates must be immersed in the fluid before the electrodes are placed on the patient, and raised again after the electrodes have been removed. 9. All operations must begin and end while the battery is at zero, increasing and decreasing the current slowly and gradually by one cell at a time, avoiding any shock to the patient. 10. Before operating, the susceptibility of the patient to the electric current should be ascertained. 11. The problem is to absorb the stricture, not to cauterize. burn, or destroy tissues. 12. *Weak currents at long intervals.* 13. In most cases a current of six cells, or from $2^1/_2$ to 5 milliampères, will do the work, but it must be regulated according to the work to be done. 14. The séances should be at intervals, not too frequently in succession. 15. The best position for the patient to assume during the operation is that which is most comfortable for himself and the operator. I prefer the erect posture, but the recumbent or others may be used. 16. Anæsthetics I like to avoid; I want the patient conscious so that he can tell how he feels. 17. Force should never be used; the bougie must be guided in the most gentle way; the electricity alone must be allowed to do the work. 18. During one séance, two electrodes in successlon should never be used. 19. All strictures are amenable to treatment by electrolysis. 20. Pain should never be inflicted by the use of electrolysis; therefore it should not be applied when the urethra is in an acute or even subacute inflammatory condition, In conclusion, he remarks that in every case that is intelligently and judiciously undertaken, success must and will follow. In the strictest sense of the word there can be no tailure in dissolving away the dense tissue that constitutes a stricture, for electrolysis is based upon a fixed chemical action of the constant current on these animal tissues. Electrolysis cannot fail, but operators may and do.—*N. Y. Med. Rec.* Sept. 25, 1886.

J. E. PILCHER (U. S. Army).

WOUNDS—INJURIES—ACCIDENTS.

I. Severe Injury from Dynamite. Amputation of Forearm. Ligature of Femoral Artery. Gangrene of Leg. Amputation of Thigh. Pyæmia. Severe Reactionary Hæmorrhage. Transfusion of Blood Four Times. Recovery. By Messrs. ANNANDALE and J. M. COTTERILL. J. P., æt. 23, a quarryman, was admitted on January 8, 1886, suffering from the results of the explosion of some dynamite cartridges. The proper apparatus for